

SpaceFibre Discussion

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SpaceWire Steering Committee Meeting
ESA-ESTEC Noordwijk, Netherlands
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SpaceFibre Future Missions

- Currently NASA has no planned missions using SpaceFibre
 - Orion (CEV) has selected AS5643 (1394b)
 - No backup plan to AS5643 exists
- DOD has satellite missions with performance requirements that would require a data bus similar to SpaceFibre
 - Data rate in Gigabit range
- NASA has supplied money to develop SpaceFibre
 - 0.1 Full Time Equivalent (FTE) for FY07

Proposed Additional High-Level Requirements

- Compatible with AS5643/1 being developed for Orion (CEV)
 - Defines physical layer only
 - SAE Aerospace Standard
 - Active transformers for longer distances
 - S400 Copper Media Interface Characteristics over Extended Distances
- Compatible with speed options of AS5643
 - S100, S200, S300, S400, S800, S1600, S3200
 - Can allow option for alternative rates as well?

Trades

- The high level trade study presented at 2006 MAPLD
- Many lower level trades - examples:
 - Coding definition
 - Initialization sequence
 - Continuous bit stream?
 - Control code types
 - Definition flow control
 - How to synchronize state of receivers descrambler with the state of remote transmitter's scrambler?
 - Power management
 - Speed negotiation
 - Etc.
- Frame types
- Frame size
- Error detection coding
- Error recovery
- Scrambling polynomial
- Etc.

Next Steps?

- Should we create separate working group for SpaceFibre to share ideas and develop concept?
 - Monthly?
 - Bi-weekly?
 - Proposed meeting time
 - 15:00 Europe/Amsterdam - 9:00 U.S/Eastern
 - U.S. Industry and other government agencies would like participate